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WHITE SULPHUR SPRINGS.—NO II.

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(Communicated for the Boston Medical and Surgical Journal.)

MINERAL WATERS IN GENERAL.

Early Use of, &c. &c.—Mineral waters rank among the ancient remedies used for the cure of disease. The Greeks, who in knowledge of medicine were superior to the nations who had preceded them, regarded natural medicated waters as a special boon of the Deity, and piously dedicated them to Hercules, the god of strength. They used them for drinking, and for general and topical bathing. Hippocrates was acquainted with the value and uses of various mineral waters, and many other Greek physicians, we are told, employed them for numerous diseases for which they are used at this day.

With the Romans, mineral waters were a familiar remedy, not only in Italy, but in all the countries in which that nation obtained dominion. Mineral springs were eagerly sought out in the countries over which their conquests from time to time extended, and prompted by "gratitude to the benefit which they experienced from their use, they decorated them with edifices, and each fount was placed under the protection of a tutelary deity."—*(Bell.)* Pliny, in his natural history, treats of various mineral waters and their uses; and it is a fact worthy of remark, that they were highly recommended by various Roman physicians, in the fifth century, in the same diseases for which they are at this day so much employed—particularly for nervous and rheumatic diseases, and for derangements of the liver, stomach and skin.

With the modern nations of civilized Europe, mineral waters, both as internal and external remedies, have always been held in high estimation. The national regulations that have, from time to time, been adopted to investigate their virtues, and their appropriate applicability, and to guard against their improper use, sufficiently manifest the importance that has been attached to them as remedial agents. Henry IV., we are told, "during his youth, had frequented the springs of the Pyrenees, and witnessing the abuses in the employment of so useful a remedy, sought to correct them after his ascension to the throne of France. He nominated by edicts and letters patent, in 1603, superintendents and superintendent generals, who were charged with the entire control over the use of mineral waters, baths and fountains of the kingdom. Most of the mineral springs and bathing establishments on the Continent of Europe, are placed under a somewhat similar superintendence, and a resident physician is also appointed by the government."—*(Bell.)*

Although mineral waters had been favorite remedial agents with the enlightened nations of the earth for many centuries, it was comparatively but recently that chemistry, by minute analysis, was able to determine with precision their constituent parts.

In 1670 the mineral waters of France were first fully analyzed by a commission appointed by the Academy of Sciences at Paris; but it was not until 1766, near a hundred years afterwards, that Bayen discovered the means of separating sulphur from sulphureous waters—nor until 1774 that the celebrated Borgamann demonstrated the existence of sulphuretted hydrogen gas. Meanwhile physicians stationed at the several watering places were active in observing and noting the various operations of the different waters on the human system, and in determining, from experience, the various cases in which they were beneficial or injurious.

Experience the only sure Guide in the Administration, &c.—After all that science can effect in determining the component parts of mineral waters, it is *experience* alone in their use, that can be fully relied upon as to their specific effects, or applicability to particular diseases. Chemical analysis is important mainly as a matter of general scientific knowledge, and may be so far practically useful to the physician, as to enable him to form correct *general views* as relates to the nature and powers of the remedy; but it is fallacious to suppose that an analysis, however perfect, can ever enable the physician, in the present state of our knowledge, and in the *absence of practical observation*, to prescribe a mineral water with confidence or safety. An accurate knowledge of the component parts of mineral waters, might do much, I admit, to prevent the incessant mistakes and mischief which medical men commit in sending their patients, "*hap hazard*," to drink mineral waters which are often unadapted to their cases; but it never can, in the absence of experimental knowledge, qualify them for giving specific and detailed directions for their use. Dr. John Bell, in his valuable work on "Baths and Mineral Waters," has the following sensible and judicious passage upon this subject. "I wish not," he says, "to be ranked among the chemical physicians, who, having discovered the proportion of each foreign ingredient in the mineral spring, and studied its operation on the economy, pretend to determine the general effect of the compound. We may, indeed, by a knowledge of the constituent parts, predict, to a certain extent, the medicinal power of the compound; but it is only by multiplied facts, that is, *experience of its use,* that we can speak positively of its virtues."

In no other country, perhaps, do mineral waters abound in greater variety than in the United States, and it is a subject of sincere regret, that their nature, applicability, and proper method of administration, should have been so little studied, both by physicians and the public at large. It is true that certain opinions generally prevail in enlightened circles, as regards the curative powers of some of our more celebrated fountains; and these opinions, so far as they go, being generally founded on experience, may, in the main, be tolerably correct. Nevertheless, there is a lamentable want of information generally, and even among our more enlightened physicians, as to the *specific nature and adaptation of our mineral waters to particular diseases*—information, the want of which must always disqualify for the safe and confident recommendation of these valuable agents.

A perfect knowledge of the various influences, and of the peculiar minute circumstances that control the use of mineral waters in different systems, as well as the best methods of using them in certain pathological conditions of the system, must, as with all other medicines, be learned from observation. Now as physicians but rarely have an opportunity of observing the use of mineral waters for a sufficient length of time and in a sufficient variety of cases, and as but little has been written by those who have observed their effects, it ought not to be supposed that the medical public generally would be greatly enlightened on this subject.

I have said that the opinions generally prevailing in enlightened circles, relative to the curative powers of our principal mineral fountains, being founded on experience, may, in the main, be correct. I would not be understood, however, as advising a reliance upon such "popular fame." Information of this kind is sufficient to awaken attention and incite inquiry. but certainly should not be implicitly relied upon in individual cases. At best, it is generally "hearsay" opinion, made up, ordinarily, from partial and empirical sources; or, quite as likely, from the prejudiced accounts which are brought by visiters from the different watering places, and which are *sweepingly* favorable, or prejudicial, as they may chance to have been benefited or worsted, and that without reference to the specific action of the agent, or that clear understanding of the pathology of the case, which would serve as a safe guide in its application to others. Every physician knows how prone persons are to err in the use of medicines, from the supposed resemblance of cases. Often am I pained to see persons persevering in the use of a mineral water to their evident prejudice, and for no better reason than that Mr. or Mrs. Such-a-one was cured of a disease supposed to be similar; or, by the general recommendation of some medical man who sent them to the "mountains" with a "*carte blanche*," to use "*some of the mineral waters*." Occasionally it has become my painful duty to advise patients to retrace their melancholy steps homeward, without using any of the waters, because none were adapted to their case.

Mineral waters are not a *panacea;* they act like all other medicines by producing certain *effects* upon the animal economy, and upon principles capable of being clearly defined. It follows, that there are various diseases and states of the system to which they are not only not adapted, but in which they would be eminently injurious.

Some years since, I was requested to visit a highly-respectable gentleman, who had just arrived at the White Sulphur with his family, from one of our distant cities. He was in wretched health, and sought my advice as to the applicability of the water to his case. On examination, I felt astonished that any medical man of intelligence should have recommended such a case to mineral waters for relief. I advised the gentleman to re-trace his steps homeward, and put himself under medical treatment, as he had no time to lose. Accordingly, the ensuing morning, he re-commenced his journey of seven hundred miles to reach his home. Medicine did for him what mineral waters were not calculated to do, and I have since heard of his entire recovery. This gentleman informed me that he had been influenced to undertake the distant, and, to him, painful journey, by a physician who had never before prescribed for his case, and who candidly stated to him that he knew but little of the mineral waters of Virginia; but had heard of many cures from their use, and therefore advised that he should hasten to give them a trial. Influenced by this medical opinion, the unfortunate invalid had dragged himself and his family seven hundred miles, under the vain hope of finding a remedy, which the physician should, in such a case, have found in his own office. Now a little more knowledge of the nature of our mineral waters, and a more commendable caution in advising their use, would have prevented the heavy sacrifice this gentleman incurred. Nor is this by any means an isolated instance—my case-book furnishes me with many others equally strong, that have come under my observation within the last few years.

Medical Efficacy, &c.—Mineral waters are exceedingly valuable as medicinal agents; are applicable to a large circle of cases; and will, unquestionably, cure many which the ordinary remedies of the shops will not. Nevertheless, it should always be borne in mind that they are not a *catholicon;* that they are not to be used for every disease; and that to be prescribed successfully, they must, like all other medicines, be prescribed with reference to the nature and pathology of the case. Nor is this caution ordinarily more necessary in using the various medicines of the shops than in using our more potent mineral waters.

Some there are, I know, who profess to be unbelievers in the medicinal activity of mineral waters, and who, without denying the benefit that is often derived from visiting such fountains, attribute the whole to travel, change of air, exercise, relaxation from business, &c. &c. Now I freely admit that these are often important agents in the cure of a large class of cases; but from long experience at a popular watering place, and the numerous cures I have seen effected from the water itself, totally disconnected with any of the adjuncts alluded to, it would be quite as easy to convince me that *bark* is not tonic, that jalap does not purge, or that mercury will not salivate, as that mineral waters may not be an active and potent means of curing disease, entirely independent of the valuable adjuvants that have been alluded to.

The advocates of the non-efficacy of mineral waters *per se*, would scarcely persist in this opinion, after seeing the large amount of active medical material, obtained by evaporation from some of our more active waters; the *white sulphur*, for instance, which yields more than 150 grains to the gallon, and which, upon analysis, is found to consist of *iodine*, *sulphur*, the various combinations of *soda*. *magnesia*, and other active ingredients. Would it not be absurd to believe, that so large amount of these efficient medical substances, as is usually taken into the stomach, by those who drink mineral waters in which they abound, could fail to exert a *positive influence* upon the economy? My own experience, for many years, in the use of such waters, enables me to bear the most unequivocal testimony, as to the *direct* and positive influence of many of them upon the human body. In the language of the celebrated Patissier, I can unhesitatingly say, that "in the general, mineral waters revive the languishing circulation, give a new direction to the vital energies, re-establish the perspiratory action of the skin, bring back to their physiological type the vitiated or suppressed secretions, provoke salutary evacuations, either by urine, or stool, or by transpiration; they bring about in the animal economy an intimate transmutation—a *profound change*; they saturate the sick body. How many sick persons, abandoned by their physicians, have found health at mineral springs? How many individuals, exhausted by violent disease, have recovered, by a journey to mineral waters, their tone, mobility and energy, to restore which, attempts in other ways might have been made with less certitude of success." And hence, most cordially do I adopt the sentiments of the distinguished Dr. Armstrong, who in speaking of the medicinal efficacy of mineral waters, says, "*I dare pledge my word, that, if they be only fully and fairly tried, they will be found amongst the most powerful agents which have ever been brought to the relief of human maladies.*"

Modus Operandi, &c.—Various attempts have been made to account for the peculiar effects of mineral waters upon the system. They seem to act, in the first place, as a simple hygienic agent. Secondly, they act, in accordance with their constituent ingredients, specifically on the animal economy. Mineral waters exert their more important influences upon the human body upon a different principle from many of the articles of the materia medica; they are evidently absorbed, enter into the circulation, and change the consistence, as well as the composition of the fluids; they course through the system, and apply the medical materials which they hold in solution, in the most minute form of subdivision that can be conceived of, to the diseased surfaces and tissues; they reach and search the most minute ramifications of the capillaries, and remove the morbid condition of those vessels, which are so commonly the primary seats of disease. It is thus that they relieve chronic disordered action, and impart natural energy and elasticity to vessels that have been distended either by inflammation or congestion—while they communicate an energy to the muscular fibre and to the animal tissues generally, which is not witnessed from the administration of ordinary remedies.

Many of the articles of the materia medica seem to act by sympathy and counter-irritation, and to cure one organ of the body by irritating another; thus calomel, by irritating the stomach and duodenum, is made to act efficiently upon the liver, to which organ it has a strong specific tendency. Not so, however, with mineral waters; they never cure one organ by irritating another. I can with confidence assert, that I have never seen mineral waters successfully used in any case in which they kept up a considerable irritation upon any of the organs of the body.

Both physicians and patients are quite too much in the habit of looking to the *immediate* and *sensible operations* of mineral waters, and of judging of their efficacy from such effects. It most cases, it is serviceable for such agents to open the bowels gently; and in some, it is best for them to purge actively. Occasionally, advantage is derived from promoting an increased flow of urine or perspiration; but, as a general rule, the greatest good is derived from the absorption of the water, resulting in that "profound change" spoken of by Patissier, or, in other words, the *alterative* action of the remedy. It should always be borne in mind that this *profound change*—this *alterative effect*—is incompatible with constant or active action of the water upon any of the emunctories. This, unquestionably, is true as relates to the *White Sulphur Water*, with which I am most familiar, and I believe it to be so with all alterative waters.

So well convinced am I, that the *alterative action* is the real curative action effected by *sulphur waters*, in nine cases out of ten where any serious disease exists, that, ordinarily, I am not solicitous to obtain much daily increase of evacuation from any of the emunctories. On the contrary, I often find great advantage from the administration of some appropriate means to *prevent* the too free action of the water, especially on the bowels and kidneys. As a general rule, it is far better that such waters should *lie quietly upon the system*, without manifesting much excitement upon any of the organs, and producing, at most, but a small increase in the quantity of the ordinary healthy evacuations.

The *quality* or kind of evacuations produced by mineral waters, is a matter of far more importance, and when strong sulphur waters are used, never fail to evidence the existence and the extent to which alterative action is going on in the system, and to this, persons using such waters, should always pay a careful attention.

I have said that the best effects of mineral waters, are their *alterative* or *changing* effects; and that in the administration of the White Sulphur Water, I do not, ordinarily, desire to provoke much increase of the natural evacuations. I do not wish, however, to be understood by this general declaration, as laying down an absolute rule of practice to govern all cases. The administration of this water, like the administration of every other active remedy, should be governed in reference to the particular character and demands of each case; and in such discriminating practice, it will sometimes be found best to use it in a manner to produce active operations for a short time. I have, indeed, generally found, that those who are actively purged by mineral waters, if they have strength to bear it, will be best satisfied with the remedy *at the time*, and in fact, are apt to feel better *at the time*, than those upon whom the water is exerting but little or no purgative effect. It may be laid down as a general fact, in the use of the *White Sulphur Water*, subject to but few exceptions, that those on whose bowels it acts freely, will feel best *while at the Springs;* while those who are but little purged, will feel best after they have *left the Springs*, and will, ordinarily, enjoy the most permanent advantage. The reason of this is obvious; in the first case, the active purgation throws off the gross humors of the body, and the patient feels promptly relieved; in the other case, the remedy lies upon the system, is absorbed, and gradually produces its changing influences—bringing the various secretory functions into a healthy condition—unloading and cleansing the machinery of the economy—silently putting its *works* to rights, and giving them their natural and healthy motion. All this requires time for its accomplishment; and hence, we often hear persons say, "I was no better while at the Springs, but I began to mend soon after I left, and have continued better since." Declarations of this kind I hear every day by persons who have previously visited the Springs, and they verify the correctness of my proposition.

Length of Time to be used, &c.—To acute diseases, mineral waters are not adapted; for all such, they are too exciting, too prone to increase the activity of the circulation, and to stimulate the general system. It is in *chronic* diseases only that they are found so eminently serviceable. By chronic diseases I mean those slow diseases of the system, uniformly attended either with *simple excitement*, chronic *inflammation*, or chronic *congestion* of the bloodvessels. To be permanently beneficial in diseases of this description, the use of mineral waters, like the disease for which they are taken, should be "chronic;" I mean an instantaneous cure should not be expected, but that the remedy should be persisted in, and the cure gradually brought about. Sulphur waters may be easily brought into disrepute by short and imperfect trials of them. To prove effectual, "they should for the most part be continued daily, in sufficient quantity, until the disease gives way, or until their inefficacy has been fairly proved by an unremitted perseverance. In some cases of ophthalmia, of rheumatism, and slight cutaneous affections, I have known them to effect a cure in two or three weeks, while in other cases, apparently similar in all respects, twice, thrice, or even four times that period has elapsed before the cure had been accomplished; and what is here affirmed of these external affections, is still more strongly applicable to internal diseases, which are seldom speedily overcome by these waters, how completely soever they may yield at last. In illustration of this point as to internal diseases, it may be mentioned that I have seen both chronic inflammation of the liver, and chronic inflammation of the rectum, where no benefit was produced for three or four weeks, and yet a *continuation* of the waters for six or eight weeks longer has effaced every vestige of the morbid indications for which they were prescribed."—*(Armstrong on Sulphur Waters.)*

There is no greater folly in the use of mineral waters, than that of laying down a *definite period of time for which they should be used*, without reference to their effects upon the system. Like all other medicines, mineral waters should be used, discontinued, or modified in their use, with a strict regard to their operations upon the body, and to their good or bad effects upon the disease. Whenever prescribed, their operations should be watched with the same care with which we watch the effects of any other medicine; and they should be persevered in, or temporarily, or permanently discontinued, or, controlled in their action by some appropriate adjuvant, according to the indications presented in each case.

It will occur to every reflecting mind, that the expectation of being cured, or even essentially benefited, in an *obstinate chronic disease*, from a few days' use of any mineral water, is altogether unreasonable. Nevertheless, I have often seen persons at watering places despairing of the efficacy of the water, simply because it had not produced an obvious and appreciable benefit in five or six days. A sort of *stereotyped* opinion indeed prevails with numerous visiters to such places, that the water should not in any case be used longer than two weeks. I scarcely need say that this is a most erroneous opinion, and often interposes between the patient and his recovery; instances of which I almost daily see at the White Sulphur. It is true, that some who hold the unwarrantable opinion alluded to, perseveringly endeavor to drink as much in the "two weeks," as they should do in six, but this only serves in a common way, to make them abandon it four or five days before their prescribed time, by absolutely disqualifying the system for its reception at all.

I can say, as the result of many years' observation, that the *White Sulphur*, which is one of the strongest sulphur waters in the world, rarely produces its full *alterative* effects within two weeks, under its most judicious administration, and under favorable circumstances for its use; and that three, four, five and even eight weeks often elapse before it has displayed its full remedial powers in obstinate cases.

General Remarks on the Administration, &c. &c.—Mineral waters are all *stimulants* in a greater or less degree, and some have attributed much of their virtue to this property. Such an opinion, however, is clearly erroneous. I have already remarked that such waters are rarely serviceable when they keep up any considerable irritation of an organ. I now remark that any considerable excitement of the general orgasm, is equally prejudicial: indeed I have often been embarrassed, and sometimes thwarted in the successful use of mineral waters, from the prevalence of this quality. The amount of excitement resulting from the use of such waters, depends upon the nature of their constituent principles; upon the quantity taken, the manner of taking it, and the excitability of each individual's constitution. If it be a water abounding in sulphuretted hydrogen gas, the most essential difference exists in taking it *with* or *without its gas*; that is, in taking it fresh at the spring, or, after its gas has flown off. In the use of the *White Sulphur Water*, with or without its gas, the most marked difference exists in its stimulating quality. In relation to this particular water, it is greatly advantageous in many cases, particularly in very excitable persons, to have the gas expelled in part, or in whole, before using it.

Some mineral waters, by varying the method of their administration, or, by the interposition of appropriate adjuvants, are capable of extensive and valuable modified actions and effects upon the human body. The White Sulphur is susceptible of as many varied, different, and modified actions upon the system generally, and upon its particular organs, by varying the methods of using it, as is mercury, or antimony, or any of our leading therapeutical agents. For instance, it can be so used as to *stimulate* distressingly—or, without any *appreciable stimulating effect*. It can be so given as almost invariably to *purge actively*; or, without lessening the quantity producing such effect, but merely by changing the time and manner of taking it, it can be so given as to exert little or no cathartic operation. It may be directed to, or restrained from the *kidneys*, or skin; and what, in a general way, is far more important, it can be so used as to *lie quietly* on the system, producing no excessive action upon any of the organs, and, with a quiet but sure progress, go on breaking up the obstructions in the glandular organs and removing the impediments to the proper discharge of their functions: equalizing the circulation, removing chronic inflammations, and generally restoring the energies of the system.

Between the action of mercury and the more powerful of the sulphur waters on the organic system, the most striking similarity exists. Dr. Armstrong long since remarked the resemblance between mercury and the sulphur waters of Europe, and confidently expressed the opinion that the latter are equally as powerful as the former, in their action upon the secretory organs; and with this very important difference, that while the long-continued use of mercury in chronic disease, generally breaks up the strength, that of the sulphur waters generally renovates the whole system. Mercury has heretofore, by common consent, been regarded as the most powerful alterative we possess. I am not prepared to dispute this high claim of the medicine, but this much I will assert, as a matter of professional experience, that sulphur water, in my hands, has proved an *alterative* quite as certain in its effects as mercury, though somewhat slower in its operations. Not only so, I believe it to be far better adapted than mercury to a large circle of cases in which glandular obstructions and chronic inflammations are to be subdued. If the claims of the two remedies for preference, were otherwise near equal, the great advantage on the score of safety from the sulphur water, would give it an immense preference over its rival. Numerous cases present themselves, however, in which they are used in conjunction to great advantage; where this becomes necessary, however, I have, as a general rule of practice, found it best not to continue the mercury longer than six or eight days: nor is it often necessary to use it continually during that period.

The effects of the *White Sulphur Water* upon the human body resemble mercury in several respects. Not to mention others, its resemblance is strikingly manifest from the fact of its producing salivation under certain peculiar circumstances. Another marked similarity may be mentioned, especially as it has a direct bearing upon the proper method of its administration: I allude to the existence of a phlogistic diathesis in individuals with whom either remedy is used. "When the system resists the specific action of mercury, it is a certain test that the inflammatory diathesis prevails to a considerable extent, and this is the cause of the resistance; for lessen the inflammatory diathesis by proper evacuations, and the specific action of the mercury will be readily induced." The system often offers the same resistance to the successful use of this water, which is evidently occasioned by the excess of the inflammatory diathesis, inasmuch as when the inflammatory disposition is abated by the lancet, purgatives, &c., the water promptly produces its wonted good effects. In the administration of the White Sulphur it is of the utmost consequence to keep this practical fact constantly in view, and by proper treatment to keep down both general and local excitement.

"Notwithstanding mineral waters are so well adapted to the cure of chronic diseases, it should not be expected that they will be uniformly successful; for it must be remembered that such diseases are only remediable when unconnected with alterations of organic tissue, which is their ultimate and mortal product. Nor is it reasonable to expect that any plan of treatment will succeed in all cases of chronic disease unconnected with alteration of tissue; and I have accordingly found the methods recommended, at times ineffectual, even when they were tried under circumstances which simply indicated disorder of the function, without any concomitant sign of disorganization."

Errors and Abuse of Mineral Waters, &c. &c.—I have before alluded to some of the abuses of mineral waters, by those who resort to them for relief—this subject, I conceive, may be still further pursued with profit to my readers. To one familiar with the many errors and mistakes committed in the use of mineral waters in this country, it is not wonderful that numbers return from visiting our most celebrated watering places, without having received any essential benefit; it is rather a matter of surprise that so large an amount of good is achieved. The precautions in the use of such waters, deemed indispensable in France, Germany and England, are greatly neglected here. There, the advice of a competent physician who is well acquainted with the nature and peculiarities of the water, is thought so important, that persons rarely enter upon their use without such *advice*, and at some places are actually not *permitted* to do so. If similar precautions were more commonly adopted by visiters at our various watering places, a far larger amount of good would be achieved to the afflicted, much injury prevented, and the character of the several waters better established and preserved. It is a subject of daily and painful observation at all of our principal watering places, to witness numerous individuals using mineral waters that are not adapted to their cases; and still more common is it to see those, to whose cases they are adapted, using them so improperly as entirely to prevent the good they would accomplish under a proper administration. Professor Mutter, of Philadelphia, makes the following judicious remarks when speaking of the use and abuse of mineral waters in this country. "Like every other remedy of any efficacy, mineral waters are liable to abuse, and it is really astonishing that such glaring errors should be daily committed, not only by the patients, but often by the *physicians* who recommend their employment. It is by no means an uncommon occurrence (and those who have visited the springs of our country, will bear me out in the statement I am about to make), for an individual to arrive, furnished with a 'carte blanche,' from a physician who has probably little or no knowledge of the active properties of the agent he recommends, to use the water as he may see fit, or with merely a charge to "*use it with caution.*' Others are sent without any direction whatever, in the hope that the water *may suit* their condition, and come trusting in Providence alone. Others, again, arrive with written instructions, to drink so many glasses of the water *per diem*, whether it agrees with them or not. Many patients do not take the advice of a physician at all, but relying on the representations of those who have derived benefit, imagine that they, too, will be cured, although in all probability, from the nature of their disease, the water may be the most prejudicial to which they could resort. Used in this careless and dangerous manner, is it to be wondered at, that so many individuals leave the springs, either not at all benefited, or in a worse condition than when they arrived. The regulations which are thought necessary, and which are adopted in most European countries, especially France and Germany, during the use of a mineral water, are either unknown or neglected in this. There, nearly every spring is supplied with an experienced physician, one familiar with the character of the water, whose duty it is to take charge of the sick as they arrive; here, with but one or two exceptions, those who frequent our watering places have to rely on *chance* for medical aid. Is this as it should be?

A vague impression seems to pervade the public mind, that mineral waters, as medicinal agents, are totally unlike all other medicines, and that in their administration there is no necessity for observing any cautions or for adopting extraneous expedients to procure the best effects of the agent employed. This is an error as injurious as it is common, and ought to be corrected in the public mind. Our more potent mineral waters ought indeed to be regularly incorporated into our materia medica, their several qualities properly defined, and the medical mind thus instructed to regard them not only as valuable therapeutical agents, *per se*, but as agents capable of extensive and valuable modifications in their application to disease. A *pathological practice* should be established in relation to them, not less strict than in relation to the ordinary remedies of the shops, and the best means of influencing their sanative operations on the system understood.

The physician who desires to throw his patient under the *alterative* influence of mercury, is not so discouraged as to abandon the remedy, if it chance at first to run off by the bowels, and thus thwart his object; but either by changing the method of using his medicine, or by uniting with it some soothing astringent, he ultimately effects the important object in view. Neither should the physician be discouraged in the use of a mineral water because it occasionally manifests a vagrant and improper effect, for facilities can be commanded to control its operations as readily as we can control the improper operations of mercury. Such facilities may generally be found, either in an *increase* or *diminution* of the quantity taken—an alteration of the *periods* at which it has been taken—or, in the manner of using it (where gases prevail), in relation to its *gaseous* or *ungaseous* form. Occasionally, medical adjuvants are found necessary, and then I have been in the habit of using those most simple, and which least deranged the animal economy.

As a general rule, I have found mineral waters most serviceable in those cases in which the stomach and general system tolerated them readily ; yet such toleration depends so much upon the proper *preparation of the system*, and the manner of using the water, that the patient should by no means infer that it is unsuited to his case, simply because it has manifested some improper operation in the commencement. For, as before intimated, it will often happen, that by changing the method of using the water, or by the administration of some appropriate adjuvant, the difficulty will all be removed, and the agent afterwards act most pleasantly and profitably upon the system.

I have thought that the foregoing remarks *on mineral waters in general* were properly preliminary to the consideration of the *specific nature* and *medical applicability* of our several mineral fountains, of which I propose to treat in subsequent numbers.

White Sulphur Springs, Va., Feb. 1st, 1844.

EPIDEMIC ERYSIPELATOUS FEVER.—NO. II.

[Communicated for the Boston Medical and Surgical Journal.]

OBSERVING practitioners cannot fail to have noticed an immense pathognomonic and pathological difference between the erysipelatous fever which has so extensively prevailed for some years past, at numerous places, for certain periods, and the peculiar and specific disease generally denominated *erysipelas*. The former, in all its aspects or protean forms, is a constitutional affection, having a local determination. The latter, it would seem from some of the best authorities, both ancient and modern, and even from the general understanding of the medical community, is simply a local disease of a specific character. J. Hunter denominates it an "*erysipelatous inflammation*." Genuine erysipelas Galen regarded merely a cutaneous affection. He avers, "*Si exquisitam fuerit erysipelas, folius cutis est affectus*." Hippocrates appears to have regarded it not only as a local affection, but as originating from a local cause. Hence his aphoristic averment, that "an erysipelas will arise from a desudation of a bone."

Both S. Cooper and M. Lawrence describe erysipelas as a cutaneous disease, sometimes affecting the subjacent tissue. Willan, Bateman, and even Wilson, in his late natural classific arrangement, place it among affections of the dermoid system. To be sure, in some instances pyrexia is introduced; it would seem, however, rather as an accidental occurrence than as an essential concomitant. These characteristics it is certain cannot embrace the epidemic which is the subject of these remarks. In this, febrile commotion is an essential feature. Indeed, without pyrexia, so far as the epidemic has fallen under my observation, it has no existence.

Those local affections which fall under the denomination of erysipelas, as above described, although they may exist, and probably always do occur during the prevalence of an epidemic erysipelatous fever, yet there exists between the two complaints a manifest discrepancy. In the local complaints there is a close specific analogy, if not an identity, with those accompanied with fever, but the absence of the general constitutional pyrexial disease makes these local manifestations entirely different concerns. They bear the same relation to erysipelatous pyrexia, that secondary variolous pustules do to true variola; or, it may be, the same which a simple inflammation of a lymphatic gland does to a pestilential bubo.

To mark more clearly the distinction between these local cases and those truly febrile, I have preferred to call the latter *erysipelatous fever;* and if the long-known name *erysipelas* be confined to the local cases, no great evil can be apprehended, and much convenience may result. This distinction exists in nature, or is presented in practice, and it surely ought to find a place in our nomenclature. It would seem that the reference of this set of diseases to the class of exanthems, as has been done by Cullen, Good, and others, may have obviated the difficulty. This, however, is disposing of the subject in a very summary manner. The class of exanthematic diseases is not very well defined. Under it are grouped disorders of very diverse and opposite characters, agreeing in a very few particulars only. This whole class or order requires a careful revision.

Dr. Good says, "*erysipelas is an idiopathic fever, producing an erythematic efflorescence.*" In its epidemic character it is truly an *idiopathic* fever, generally producing in its local manifestations much more than what "*erythematic efflorescence*" will imply. The surface of the body, the cellular texture, the brain, the lungs, the abdominal viscera, the ligaments, the cartilages, and even the bones, are subjects of its ravages. In each of these parts of the body the writer has witnessed its destructive consequences. The severity of these local manifestations generally has been proportionate to the intensity of the preceding or accompanying fever. When they have occurred without being either preceded or followed by constitutional febrile disturbance, little or no danger was to be apprehended. During the prevalence of our epidemic of 1842, I was desired to visit a woman who was said to have been severely attacked in the head. I found her at the wash-tub, having nearly finished her washing, although one side of her head and half of her face were covered with an erysipelatous inflammation to such a degree as to close one eye. There was no constitutional affection, and health was speedily restored. These local affections sometimes occurred without any discoverable cause; more frequently, however, they resulted from some local lesion or irritation. A slight scratch, wound, extraction of a tooth, or the irritation caused by a diseased tooth, not unfrequently produced this specific inflammation. In 1826 several instances occurred from venesection. Although *these local manifestations* may generally be said to be devoid of much danger, they ought not to be regarded as trivial or unimportant. They sometimes appeared to originate the constitutional disease. Under these circumstances all the evils of the idiopathic fever are to be apprehended, especially if the patient be *enceint.* During our first epidemic of this kind, a valuable lady in this situation was bled by one of my medical friends; the edges of the puncture were attacked with erysipelatous inflammation, the constitutional affection speedily ensued, and death resulted in the course of a few days.

This local disease so generally followed any local injury, or solution of continuity, that in the late visitation of the epidemic erysipelas in this vicinity, in 1842 and 3, several of my medical friends declined either to extract a tooth or to perform venesection, except in cases of actual necessity. No instance has fallen under my observation, or have I been informed of any, in which any evil of this nature has ever resulted from the use of the lancet in a person laboring under the erysipelatous epidemic. In both our epidemics, more especially in the latter, these local developments were generally of the erratic character, and commonly of the phlegmonous variety. They usually appeared within the first forty-eight hours of the febrile invasion, sometimes at the onset. The pharynx and tonsils presented an erythematic aspect, resembling diphtherite, having a greater or less degree of lividity. To this would succeed a metastasis to the ear, face or scalp—and thus progressively the skin and cellular texture of the whole body were occasionally affected. If in its peregrinations the local development occurred in a vital organ, the event would speedily ensue either in recovery or death. If it became deeply seated in the cellular texture, a bone or large joint, extreme and protracted suffering was to be anticipated. I several times saw the Hon. Mrs. Larabee, of Shoreham, patient of Dr. Hitchcock, in whom the local manifestation terminated in a large abscess in the side of the chest, involving the large pectoral muscle, axilla and clavicle, which latter finally became separated from the scapula. She recovered. As counsel, I saw a patient of Dr. Maxfield, of Panton, with a similar abscess. The patient, a man upwards of fifty, ultimately died after almost a year's suffering. And my friend, the late Dr. Lucius Smith, of Brandon, whom I several times visited, had a like termination under the fascia of the leg. He died after about sixty days' severe suffering. J. A. Allen.

Middlebury, Vt., Feb. 13th, 1844.

AUTO-SURGICAL OPERATION.

To the Editor of the Boston Medical and Surgical Journal.

Sir,—If this case is sufficiently worthy of an insertion in the Medical Journal, it is at your service; if not, you can pass it by.

A very singular operation took place a short time since in a town about twenty-five miles from this city. It appears that two young men, from 18 to 20 years old, had for several years been much addicted to the habit of masturbation. One of these, during that time, had suffered much from ill health, and a great part of the time had required the attendance of a physician. But the true cause of his complaints not being known, he obtained no relief, and continued to grow worse; until at length he became much debilitated, and his mind considerably affected—when, from some book, or by accident, he received a hint as to the cause of his troubles. He immediately made efforts to overcome the habit, but not having moral courage sufficient, he made an agreement with his associate to perform the operation of castration upon themselves, and appointed a time for the purpose. But his friend, intimidated by his resolution, did not abide by the agreement, and he was left to do it alone. However, he was determined that it should be done, and took the opportunity, when he was under great fatigue (having walked a distance of twenty miles from a muster-field, where he had carried a gun all day) thinking that he should soon sink into repose and be insensible to the pain. Accordingly before retiring, he applied a ligature (as is practised upon some animals), tightly enclosing the testicles below it, and let it remain on the whole night. In the morning, finding the parts discolored, attended with considerable pain, and thinking the operation would be long and tedious, he resolved to complete it at once; and, going out to a secluded place, and removing the ligature, with a common jack-knife sharpened, he made an incision into the scrotum, drew down the spermatic cords, that he might do it thoroughly, as he said, and severed them close to the abdomen. He intended to have kept it a secret; but hemorrhage came on so violently, that he was obliged to disclose it—thus these particulars were discovered. In restraining the hemorrhage, it was impossible to take up the vessels, as they had retracted out of reach; and a large sponge, compressed small, was forced into the wound, when, as soon as a coagula had formed about it, the hemorrhage entirely ceased, and the patient is now doing very well.

B. L. Ball.

February, 1844.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, FEBRUARY 28, 1844.

Natural Fountain of Hydrogen Gas at Fort Gratiot.—We are indebted to Lieut. Marcy, of the United States Army, for the following account of a natural curiosity in the western country. It is communicated in a letter to the editor, under date of Feb. 4, 1844.

"My Dear Sir,—I have just returned from a visit to a place a short distance from here, where a discovery has recently been made which appears to me very curious. While examining it, it occurred to me that a description of it would interest you more than any other of my acquaintances. A farmer, about six miles from here, was boring for water, and had penetrated the earth one hundred and fifteen feet, when, upon drawing out his augur, he heard a deep gurgling noise at the bottom of the hole he had made, and immediately a column of gas burst from it with the most terrific violence, rising to the height of seventy feet, carrying with it stones and pieces of clay the size of a pigeon's egg, and attended with a noise very similar to that of letting off steam from a large steamboat. This continued, with unabated violence, for thirty-six hours, when it moderated a little, and a pipe was inserted in the hole with a stop-cock. The proprietor has attached to this smaller pipes, which convey the gas into his house, and light it in the most brilliant manner imaginable. It appears to be hydrogen gas, almost pure; it burns with a lambent blue flame, without odor, extinguishes flame when immersed in it, and possesses the properties of hydrogen according to all the tests that it was in my power to apply at the time.

I am aware that this gas has been found in crevices of rocks, and in great quantities; but I have never heard of its being found in a similar locality to this, and in such quantity, before. The country in the vicinity is low and wet, and the soil alluvial. In boring for water, the proprietor informed me that he penetrated ninety-four feet through a plastic blue clay; he then passed through a stratum of coarse gravel, when he encountered a stratum of dark bituminous shale of about two feet in thickness; then into a stratum of clay and gravel mixed, and it was while boring in this that the gas burst forth. The reservoir must be very extensive, as the tubes have been kept constantly open ever since the discovery of the gas (about three months), and a sufficient quantity has been kept ignited to warm and light the house of the proprietor during that time. Yet the supply does not appear to diminish. I am very respectfully yours,

R. B. Marcy.

University of Maryland—Impeachment of Professor Hall.—A difficulty existed in the board of medical professors, it seems, last season, in the medical department of the University of Maryland, which took the form of a complaint against R. W. Hall, M.D., who was thought not properly to sustain the chair in which he had been comfortably seated many years. A very stout pamphlet is out upon the world with this title—"Testimony in the Matter of the Impeachment of Professor R. W. Hall, before the Regents of the University of Maryland. By J. H. B. Latrobe, G. W. Dobbin and C. F. Mayer, Esqs., acting as a committee appointed by the Regents."

All this formidable affair commenced on Friday, the 18th of August, 1843—and, according to the evidence, actually ended in nothing but smoke. The Professor is still at his post, says report, as popular as ever, and as obnoxious, too. One would have supposed that he would have fled from that seat of learning, as Lot fled from the burning cities of the plain, after such a formidable movement in relation to his competency as a teacher—his alleged unwillingness to pay old scores, &c. But after all this array of court etiquette, solemnity of procedure, and magisterial dignity in conducting the impeachment, Dr. Hall, we understand, is still on the ground, and so are the gentlemen with whom he was associated when this great public excitement commenced.

Thus much for a preface, having in view a further comment, together with an occasional extract from the pamphlet, hereafter. Before leaving the subject, however, we are happy in saying that the University School of Medicine is flourishing exceedingly. We were present, a few days ago, at one of Dr. Smith's lectures, and noticed, with a feeling of gratification, that the class was not only large, but made up of gentlemen who were attentively storing up the rich treasure of knowledge from the experience and store-house of their eminent instructer.

French System of Obstetric Medicine.—Dr. Gunning S. Bedford, one of the professors of the University of New York, whose name is not unknown to the fraternity, will soon complete a translation, from the French, of M. Chailly's Treatise on Obstetrics, the present text-book of the Paris schools of medicine. From the familiarity which Dr. Bedford has with that department, having been a public teacher many years, the medical public have every reason to expect a very important and complete work.

A Pattern of Medical Industry.—Dr. A. Sidney Doane, who has probably translated a greater number of important books from the French, on medicine and surgery, than any other man in this country, to say nothing of his celebrated notes and commentaries on Good's Study of Medicine, has again resumed the business in which he so much excels. From his reputation for untiring industry, it is presumed that a series of new and valuable books may be expected. He could keep a pretty extensive publishing house actively employed, were he disposed to make an extra exertion. All Dr. Doane's remodelled publications have been favorably received—and they should be, for he preserves the truth and spirit of the authors.

Medical Catalogues.—These have accumulated very fast of late, but we are at present unable to bestow that attention upon them which is their due. It may not be out of place to mention that they all give evidence of unusual prosperity, and the multiplication of members of the profession may therefore be expected. With the increase of students, there is a decided effort, of a commendable character, with every chair, to increase the facilities, without enhancing the price, of instruction.

New Treatment of Uterine Affections.—A medical gentleman of Philadelphia has discovered a new method of managing certain morbid conditions of the uterus, which has given rise to some interest, not perhaps because there is any new principle developed, but principally on account of the novelty of the thing. Within a few months, or weeks, we are not certain as it regards the exact period, he read a paper before the Philadelphia Medical College that would create a sensation, it is said, were it published.

If some one in that city would have the kindness to send a copy of the article to Massachusetts, it might be widely circulated, and excite equal interest in this direction.

A System of Physiology in Honolulu.—A communication was received a short time since at the Mission House, in this city, in which mention is made of the following curious fact. Dr. Andrews, of the Foreign Mission Service, stationed at Honolulu, is preparing a work on human physiology, in the native language. He has sent out a request for various drawings and plates, to illustrate the text. This is really a very interesting enterprise. About four years ago the Class Book of Anatomy, published in this city by Mr. R. M. Davis, was translated into the Sandwich Island dialect, and many of the best plates copied on copper by native artists. That, with the system of physiology now in preparation, show that there is a thirst for knowledge in the isles of the sea. It seems, too, that both these works are for common schools. They are therefore giving an excellent example of what should be done in every district school in the United States, viz., have the elements of anatomy and physiology regularly taught.

Tying the Subclavian Artery.—Dr. Warren, Sen., of this city, performed the very critical and important operation of tying the subclavian, on the 16th, at the Massachusetts General Hospital, on a middle-aged man, the details of which will unquestionably be given to the medical public very soon. We believe this is the first time the operation was ever performed in New England, and only the third case in the United States. The patient is doing extremely well.

Extraction of a Rag from the Nostril.—Dr. Hayward, in presence of his students, on Saturday, Feb. 24th, at the Massachusetts General Hospital, took from the nostril of a child a bit of rag, which had been snugly lodged there one entire year. Being completely coated with mucus, it was conceived to be a polypus. The extraction by forceps was exceedingly easy for the patient, and a cure was of course instantly effected.

Stomach Pump.—In the article last week, in which large doses were said to be administered in a case of poisoning, we unintentionally omitted to mention that the case occurred in Dr. Warren's pratice, before the invention of the stomach pump.

Lecture Fees in the Boston Medical School.—In consequence of a misprint in the fees of the professors in the medical department of Harvard University, we publish the following correct list of their fees :—Anatomy and Operative Surgery, $15. Midwifery and Medical Jurisprudence, $10. Materia Medica, $10. Principles of Surgery and Clinical Surgery, $10. Chemistry, $15. Theory and Practice of Physic and Clinical Medicine, $15.

Castleton Medical College.—We are informed that the name of Wellington Duke Murphy, of N. Carolina, should have been included in the list of graduates of this institution, on page 386 of our last volume.

Pennsylvania Hospital for the Insane.—At the date of the last report, there were one hundred and eighteen patients in the Hospital, since which one hundred and forty have been admitted, and one hundred and twenty-six have been discharged or died, leaving one hundred and thirty-two under care at the close of the year.

Of those discharged, were cured, 68; much improved, 7; improved, 14; stationary, 20; died, 17.

Ten males and seven females have died during the year. Of these, three were cases of apoplexy (two being third attacks), three were cases of dysentery, of a violent form, with which several of our debilitated patients were attacked during the past summer; 2 died from abscess of the kidneys; 1 from chronic bronchitis; 1, cancer of the intestines; 1, ulceration of the intestines of long standing; 1, erysipelas, with effusion in the thorax; 1, gradual wasting of the powers of life; 1, sudden death, in a case of enlargement of the heart, with ossification of the aorta; 2 were cases of inflammation of the brain, dying on the fourth day after admission; and one patient, who had been under high excitement for some time, fell into a state of collapse, and died a few hours after reaching the Hospital.

Four hundred and thirty-nine patients have been admitted since the opening of the Hospital. Of the supposed causes of insanity in these cases, some of the more prominent were as follows. Ill health of various kinds, 64; intemperance, 26; loss of property, failures, &c., 32; disappointed affections, 10; intense study, 8; domestic difficulties, 8; grief, loss of friends, &c., 28; religious excitement, 21; want of employment, 12; puerperal state, 13; masturbation, 3; mental anxiety, 10.—*Dr. Kirkbride's Annual Report.*

Medical Prize Essays among Students.—The prizes for the annual dissertations read before the Boylston Medical Society of Harvard University, were awarded to the following gentlemen:—

First Prize.—To William R. Lawrence, of Brookline, for an article on dyspepsia.

Second Prize.—To Wm. Thayer, of Boston, on the causes of phthisis.

Third Prize.—To F. S. Ainsworth, of New Ipswich, N. H., on erysipelas.

To Correspondents.—Dr. Knowlton's paper on Erysipelas and Puerperal Fever, Dr. Crane's case of Anomalous Convulsions, Dr. Tabor's Bibliography of Tobacco, and some critical remarks on Dr. Lane's Physiology, have been received for publication.

Books, &c., Received.—Dr. Walkly's Two Years' Experience in the Management of Magneto-electricity, &c.—Report of the Pennsylvania Hospital for the Insane.—Regulations of the New York Surgeon's Bandage Institute.—Professor Dunglison's Introductory Lecture.—Catalogue and Circulars of the Albany Medical College, and the Willoughby University.—The Position and Prospects of the Medical Student, by O. W. Holmes, M.D.; and Dr. Litton's Introductory Lecture in the Medical Department of the St. Louis University.

Married,—At New Market, N. H., N. B. Chase, M.D., to Miss S. E. Branscomb.—At Elkton, Ky., Dr. Geo. L. Upshur to Miss S. A. Parker.

Died—At Barnwell C. H., S. C., Dr. Thomas Blackwood, a native of Ireland.—At Morristown, N. J., Dr. Theoph. Johnes, in consequence of a wound made by examining a body, 35.—At Philadelphia, Dr. Fisher J. Snow.—At Savannah, Geo., Dr. Church, a native of the North, by a suicidal act.—In Concord, N. H., Dr. J. C. Prescott, formerly of Pittsfield, N. H., 48.—At Windham, Me., Dr. James Bradbury, for many years in extensive practice in Parsonsfield.

Number of deaths in Boston for the week ending Feb. 24, 37.—Males, 21—Females, 16. Stillborn, 4.

Of consumption, 5—measles, 3—teething, 1—dropsy on the brain, 2—croup, 1—cholera infantum, 1—typhus fever, 1—marasmus, 2—scarlet fever, 2—diabetes, 1—disease of the heart, 1—lung fever, 3—catarrh, 1—inflammation of the bowels, 1—inflammatory fever, 1—throat distemper, 1—dropsy, 1—cancer, 2—inflammation of the lungs, 1—child-bed, 1—sudden, 1—infantile, 2—unknown, 2.

Under 5 years, 21—between 5 and 20 years, 1—between 20 and 60 years, 13—over 60 years, 2.

Open Anus in certain Forms of Fæcal Incontinence.—In a case of severe sporadic dysentery, recently related by M. Bouchut (Jour. de Medecine), the anus remained permanently open, and allowed the contents of the rectum to escape, without the patient being able to restrain their emission. This state of the anus he ascribes to weakness of the sphincter ani, and to predominance in the action of the levator ani, which is the dilator of the anus.

The paralysis of the sphincter ani in this case may be explained by a principle in pathology, on which great stress is laid by some continental pathologists, among whom we may mention M. Gendrin. According to this pathological law, whenever a mucous membrane is severely inflamed, the muscular fibres which are in contact with it become paralyzed, as a necessary consequence of the propagation to them of the inflammation. Thus, when the mucous membrane of the larynx is inflamed, the muscular fibres of the vocal cords are paralyzed, and aphony follows. The existence of the law may be illustrated by many other examples. In bronchitis, or inflammation of the bronchial mucous membrane, if the inflammation is intense, extreme dyspnœa follows, and as M. Gendrin very correctly remarks, all the symptoms of pulmonary emphysema ensue, owing, no doubt, to the paralysis of the muscular fibres of the bronchial tubes. In peritonitis the inflammation of the peritoneal covering of the intestinal canal extends to the muscular coat, completely paralyzes it, and thus gives rise to constipation; as, also, the paralyzed intestine no longer offering any resistance to the expansion of the gases it contains, tympanitis follows. In severe enteritis it is the inflammation of the mucous membrane which paralyzes the muscular structure; but as the intestinal mucous membrane is separated from the muscular one by a fibro-cellular layer, the inflammation acts less intensely on the muscular fibres than in peritonitis, and unless it be very severe, diminishes, but does not abolish, its contractile power; thence it is that, generally speaking, in enteritis we have mere constipation, tympanitis only existing in the worst cases.—*London Lancet.*

Ergot of Rye in Retention of Urine —The following is an outline of a case related in the Edinburgh Monthly Journal by Dr Ross:—A man, ætat. 72, was seized with retention of urine, which continued for three days. Incontinence then took place; the urine dribbled away, and a catheter being introduced, a large quantity, still remaining, was drawn off. Retention again required the use of the catheter, and different remedies were applied for two months, when Dr. Ross resolved administering ergot of rye, the use of which he had seen mentioned in one of the periodicals. The medicine was given in ten-grain doses every morning, and increased to half a drachm. Great irritability of the bladder was the result. The effects of the medicine was still kept up, and after two months' perseverance the expulsive power of the bladder was completely restored. Such being the facts of the case, the remedy seems to merit a trial, "especially where the retention occurs in old subjects, and depends on paralysis of the bladder, arising simply from previous over-distention."—*Ibid.*

Glossology: or the Additional Means of Diagnosis of Disease to be derived from Indications and Appearances in the Tongue, by Benjamin Ridge, M.D., has lately been published in London.